

in comparative abundance from 50 to 200 fathoms. At a depth of 50-60 fathoms it appears to be in greatest profusion, associated with form B.

The Pelagic Foraminifera.

On reference to the foregoing Distribution Table it will be noticed that the pelagic species found in the dredgings almost uniformly increase in number according to the depth of water, and concurrently as the open water of the ocean is approached. This is exactly what might be expected, since the sides of the atoll present an even slope, and there are no other islands in the vicinity. An exception to this rule is *Globigerina conglobata*, which is frequently found in the shallow sands round the atoll. The thickness of the test in this species is a striking feature, and is comparable with other pelagic forms originally thin-shelled, but which become possessed of a thickened shell-wall on assuming the conditions of life in common with other bottom-living forms.

The list of pelagic species occurring at Funafuti is as follows:—*Globigerina bulloides*, *G. bulloides* var. *triloba*, *G. rubra*, *G. Dutertrei*, *G. pachyderma*, *G. subcretacea*, *G. æquilateralis*, *G. conglobata*, *G. sacculifera*, *G. digitata*, *G. dubia*, *Orbulina universa*, *Caudenia nitida*, *Sphæroidina dehiscens*, *Pullenia obliquiloculata*, *Cymbalopora (Tretomphalus) bulloides*, *Pulvinulina Menardii*, *P. tumida*, and *P. canariensis*.

The pelagic species noted from the beach-sands are *Globigerina sacculifera* and *Cymbalopora (Tretomphalus) bulloides*; whilst from the shallowest dredgings of the lagoon on the open side small specimens of *Globigerina bulloides* and its variety *triloba* have occurred with some frequency.

In bringing to a conclusion the main results on the Foraminifera of the dredged material down to 200 fathoms from Funafuti, it gives me much pleasure to reiterate my sincere thanks to those who have so carefully collected the material upon which this examination has been based; as well as to Prof. Judd, C.B., for facilities very kindly afforded for studying the collections at the Royal College of Science. My thanks are also due to my wife for assistance in elaborating this work, and to Mr. E. J. Tallin for his help in the selection of specimens.

EXPLANATION OF THE PLATES.

PLATE 35.

- Fig. 1. *Haddonia torresiensis*, Chapman. A specimen broken off main attachment, and growing over an echinid spine*. Funamanu (Beacon I.), 150 fathoms.
- Fig. 2. Reef-fragment drawn the natural size, from Funamanu, 80 fathoms, chiefly formed of *Carpenteria rhapsidodendron*, Möbius. The letters signify:—
- c.r. *Carpenteria rhapsidodendron*.
 - b. Basal portion of the same.
 - c.u. *Carpenteria utricularis*.
 - p.m. *Polytrema miniaceum*.
 - p.p. *Polytrema planum*.
 - g. Gorgoniid stem.
 - s. *Serpula*.
- Fig. 3. *Carpenteria serialis*, sp. nov. A colony of serial chambers, growing between masses of *Polytrema planum*. W. of Tutanga, 200 fathoms. × 4.
- Fig. 4. A large fragment of the reef-former *Polytrema planum*, Carter. The specimen shows a bivalve shell nearly covered up, and also attached specimens of *Polytrema miniaceum* and a *Serpula*. Off Tutanga, 135 fathoms. Natural size.

PLATE 36.

- Fig. 1. *Haddonia minor*, sp. nov. Lateral aspect. Dredged off Tutanga, 50-60 fathoms. × 20.
2. *H. minor*, sp. nov. Oral aspect. Tutanga, 50-60 fathoms. × 20.
3. *Discorbina acuminata*, sp. nov. Lateral aspect. Shore-sand, Avalau Islet. × 60.
4. *Tinoporus baculatus* (Montf.), var. *florescens*, nov. Lateral aspect. Shore-sand, Avalau Islet. × 30.
5. *Spiroloculina parvula*, sp. nov. Lateral aspect. Off Tutanga, 200 fathoms. × 40.
6. *Ophthalmidium cornu*, sp. nov. Lateral aspect. Off Tutanga, 50-60 fathoms. × 40.
7. *Haddonia minor*, sp. nov. Lateral aspect of a small irregular specimen. Off Tutanga, 50-60 fathoms. × 40.
8. *Haplophragmium cassis* (Parker). Lateral aspect. Dredged W. of Tutanga, 35 fathoms. × 40.
9. *H. tessellatum*, sp. nov. Lateral aspect. Dredged off Funamanu, 50 fathoms. × 40.
10. *Gaudryina attenuata*, sp. nov. Lateral aspect. Dredged W. of Tutanga, 35 fathoms. × 40.
- Figs. 11 a-c. *G. rotunda*, sp. nov. 11 a, lateral aspect; 11 b, oral aspect; 11 c, aboral aspect. Off Tutanga, 200 fathoms. × 10.

* See Journ. Linn. Soc., Zool. vol. xxviii. (1900) p. 6, last paragraph.

- Fig. 12. *Bifarina limbata* (Brady). Lateral aspect. Off Tutanga, 200 fathoms. $\times 40$.
13. *Lingulina carinata*, d'Orbigny. Lateral aspect. Off Tutanga, 200 fathoms. $\times 40$.
14. *Fronicularia spathulata*, Brady. Lateral aspect. Off Tutanga, 200 fathoms. $\times 40$.
15. *Cristellaria mirabilis*, sp. nov. Lateral aspect. Off Tutanga, 200 fathoms. $\times 5$.
- Figs. 16 *a, b*. *Globigerina suberetacea*, sp. nov. 16 *a*, inferior aspect; 16 *b*, peripheral aspect. Off Tutanga, 200 fathoms. $\times 20$.
- Figs. 17 *a, b*. *Spirillina decorata*, Brady, var. *unilatera*, nov. 17 *a*, superior (smooth) surface; 17 *b*, inferior (ornate) surface. Off Tutanga, 200 fathoms. $\times 40$.
- Figs. 18 *a-c*. *Cymbalopora (Tretomphalus) inversa*, sp. nov. 18 *a*, basal aspect; 18 *b*, lateral aspect; 18 *c*, median section through the Cymbaloporoid shell and the inverted "brood-chamber," which in this species is thrown over the primordial series of chambers; the inflated chamber is usually filled with a secondary or ? organic calcareous deposit, showing radial and concentric structures as if formed of aragonite. W. of Tutanga, 35 fathoms. $\times 40$.
- Fig. 19. *Pulvinulina punctulata* (d'Orb.), var. *scabra*, nov. Superior aspect. Off Tutanga, 200 fathoms. $\times 13$.

On some Ostracoda from Funafuti.
By FREDERICK CHAPMAN, A.L.S., F.R.M.S.

[Read 19th December, 1901.]

(PLATE 37.)

DURING the progress of the examination of the rich foraminiferal material from Funafuti which I have had the privilege of describing, many specimens of Ostracoda have been selected and mounted, with the view of furnishing material for a separate report. This collection of Ostracoda has been kindly placed in my hands by Prof. J. W. Judd, C.B., LL.D., F.R.S., for description, who has also given me facilities for working upon them, as time permitted, in the Geological Laboratory of the Royal College of Science.

The Ostracoda from Funafuti have been obtained from various sources during the work of the Expeditions for the purpose

of boring in the Atoll. They represent the recent deposits obtained by dredging outside the Atoll at moderate depths for the most part, but many specimens were also selected from the dredgings in the lagoon, the beach-sands, the deep-sea deposits (not yet fully worked out), and the sands from the atoll-boring. The data attached to the specimens of the latter samples, as regards depth, are probably of not much value, since there must be considerable admixture of loose material in the bore-hole during the process of boring.

The total number of species is 52, six of which are new. The commoner forms present many striking facts as to their variation at different depths and under dissimilar conditions.

A large number of the species enumerated here have been described from the various groups of islands in the Pacific by Dr. G. S. Brady, the remainder being known from widely scattered localities. The occurrence of the genus *Limnocythere* in the samples is noteworthy, on account of its freshwater habit.

The valves were for the greater part empty, or otherwise mounted for the examination of the animal or their appendages.

SECTION I. PODOCOPA.

Family CYPRIDIDÆ.

PONTOCYPRIS, *G. S. Brady*.

PONTOCYPRIS ? *FABA*, *Reuss*, sp.

Bairdia faba, Reuss, 1855, Ein Beitrag zur genaueren Kenntniss der Kreidegebilde Meklenburgs, Zeitschr. d. deutsch. Geol. Gesellsch. p. 278, pl. x. fig. 2.

Pontocypris? faba, Reuss sp., G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 37, pl. i. figs. 4 a-d.

Several valves were found in the material from Funafuti, generally comparable with those which show the greatest height of carapace in the 'Challenger' series.

From the first boring at Funafuti, near the surface (Sollas collection); lagoon dredgings, sample 18, 9 miles from the Mission Church, Funafuti (David coll.); beach-sand, Avalau Islet, Funafuti (Sollas coll.); dredgings W. of Tutanga, 200 fathoms (Halligan and Finckh).

PONTOCYPRIS ATTENUATA, *G. S. Brady.*

Pontocypris attenuata, G. S. Brady, 1868, Ann. Mag. Nat. Hist. ser. 4, vol. ii. p. 179, pl. iv. figs. 11-14; id. 1890, Trans. Roy. Soc. Edinb. vol. xxxv. p. 491, pl. i. figs. 3, 4.

In one instance only the valves from Funafuti show indications of a posterior spine; otherwise they resemble the most typical specimens. Dr. Brady has lately described this species from Nouméa, and from the reef at Apia, Upolu.

At Funafuti this species was found in the beach-sand at Avalau Islet (Sollas coll.); in the lagoon dredgings, sample 18, 9 miles from the Mission Church, $7\frac{1}{2}$ fathoms (David coll.); off Funamanu, 150 fathoms, and off Tutanga, 50-60 and 200 fathoms (David, Halligan and Finckh coll.).

PONTOCYPRIS SICULA, *G. S. Brady.*

Pontocypris sicula, G. S. Brady, 1890, Trans. Roy. Soc. Edinb. vol. xxxv. p. 492, pl. i. figs. 7, 8.

The type specimens were found in anchor-mud, at 4 fathoms, Sava-Sava, Fiji.

Characteristic valves were found at Funafuti in the beach-sand, Avalau Islet (Sollas coll.); and in dredgings, N. of Pava, 32 fathoms, and off Tutanga, 200 fathoms (David, Halligan and Finckh coll.).

ARGILLÆCIA, *G. O. Sars.*

ARGILLÆCIA AFFINIS, sp. nov. (Pl. 37. figs. 1 a-c.)

Carapace oblong, somewhat compressed, subpyriform; height less than half the length. In side view the anterior extremity obliquely rounded; posterior produced, with the ventral angle subacute. Dorsal margin slightly arched, or nearly straight, especially in the middle third, sloping sharply backward to the ventral angle. Ventral margin slightly sinuate, hollow in the centre. Edge view subovate, acuminate in front, rounded behind; width equal to the height. End view nearly circular. Shell-surface polished, and seen to be faintly pitted, when viewed with a high power. Length of carapace .66 mm.

This species is most nearly allied, in the form of the carapace, to *A. acuminata*, G. W. Müller*. The specimen was not

* Monogr. Ostracoda (Fauna des Golfes von Neapel), xxi. 1894, p. 261, pl. 12. figs. 1, 2.

preserved well enough to show any of the organization of the animal, and further specimens may show that it has something more than a relationship with Müller's species. Our specimen differs from the former in the greater lateral width of the carapace, and the more tumid posterior extremity. *A. affinis* differs from *A. eburnea*, Brady, in its more regularly ovate form.

From soundings made by H.M.S. 'Penguin' near Funafuti, lat. 11° 05' S., long. 178° 40' E.; Sample 2, *Globigerina*-ooze, 1489 fathoms.

Family BAIRDIIDÆ.

MACROCYPRI, *G. S. Brady*.

MACROCYPRI DECORA, *G. S. Brady*.

Macrocypris decora, G. S. Brady, 1880, Rep. Chall. Exped., Zool. part iii. p. 44, pl. i. figs. 3 *a-d*, and pl. vi. figs. 8 *a; b*.

Among other localities this species has lately been recorded from Nouméa, New Caledonia, and Taviuni, Fiji.

At Funafuti, *M. decora* was found in dredgings from N. of Pava Islet, at 32 and 36 fathoms; off Funamanu, at 150 fathoms, and off Tutanga at 50-60 and 200 fathoms (David, Halligan and Finckh coll.).

BAIRDIA, *M' Coy*.

BAIRDIA AMYGDALOIDES, *G. S. Brady*.

Bairdia amygdaloides, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 54, pl. ix. figs. 5 *a-f*, pl. x. figs. 2 *a-e*.

Of the coral-reef species of *Bairdiæ* this is one of the most striking, on account of its graceful outlines. It is well-known in the Pacific area.

At Funafuti, *B. amygdaloides* was found in the following samples:—

In the sand from the 1st boring near the surface, in the 2nd boring at 70 ft. down, in the beach-sand from Avalau Islet, and from lagoon dredgings, Rocky Islet (Sollas coll.). In the dredgings across the lagoon, sample 2, 1 mile from the Mission Church, 15½ fathoms; sample 6, 3 miles from the Mission Ch., 21 fathoms; sample 7, 3½ miles, 24 fathoms; sample 18, 9 miles, 7½ fathoms (David coll.). In dredgings from N. of Pava Islet

at 32, 35, and 36 fathoms, from Funamanu at 50 and 150 fathoms, and from Tutanga, at 35, 50-60, and 200 fathoms (David, Halligan and Finckh coll.)

BAIRDIA CROSSKEIANA, G. S. Brady.

Bairdia Crosskeiana, G. S. Brady, 1880, Rep. Chall. Exp., Zool. pt. iii. p. 58, pl. ix. figs. 3 a-c.

Dr. Brady has lately noted the above species from Fiji and Samoa. It is the commonest and most widely distributed form of the Ostracoda from Funafuti; and its occurrence at such a depth as 1489 fathoms is very remarkable.

From sand of the 1st boring in the Atoll, near the surface, from the 2nd boring at 40 feet down, and at 70 feet down; from the beach-sand of Avalau Islet, the lagoon beach of Fuafala, and the dredging in the lagoon at Rocky Islet (Sollas coll.). From the dredgings across the lagoon, sample 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms; sample 2, 1 mile from the Mission Ch. at $15\frac{1}{2}$ fathoms; sample 4, 2 miles from Mission Ch. at 23 fathoms; sample 6, 3 miles from Mission Ch. at 21 fathoms; sample 7, $3\frac{1}{2}$ miles from Mission Ch. at 24 fathoms; sample 18, 9 miles from Mission Ch. at $7\frac{1}{2}$ fathoms (David coll.). From dredgings north of Pava Islet at 32 and 36 fathoms; off Funamanu at 50 and 150 fathoms; S. of Fuafatu, 60 fathoms; off Tutanga at 35, 50-60, and 200 fathoms (David, Halligan and Finckh coll.). Also from the 'Penguin' soundings, Sample 2, *Globigerina*-ooze, 1489 fathoms.

BAIRDIA WOODWARDIANA, G. S. Brady.

Bairdia Woodwardiana, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 57, pl. xi. figs. 1 a-e.

Previously recorded among other localities from Fiji, this species has been sparingly obtained in several of the Funafuti samples:—

From sand of the 1st boring in the Atoll, near the surface; from the 2nd boring at 70 ft. down; and from the beach-sand at Avalau Islet (Sollas coll.). Also in dredgings around the Atoll, N. of Pava, at 32 and 36 fathoms; off Funamanu at 150 fathoms; S. of Fuafatu, 60 fathoms, and off Tutanga at 35 and 200 fathoms (David, Halligan and Finckh coll.).

BAIRDIA TENERA, *G. S. Brady.*

Bairdia tenera, G. S. Brady, 1886, Journ. Linn. Soc. (Zool.), vol. xix. p. 304, pl. xxxix. figs. 13-15; id. 1895, Trans. Roy. Soc. Edinb. vol. xxxv. p. 493, pl. i. figs. 11, 12.

The original specimens of the above form were obtained from Ceylon, and Dr. Brady subsequently obtained others from Samoa. At Funafuti *B. tenera* occurred only in one dredging, off Tutanga at 200 fathoms.

BAIRDIA SIMPLEX, *G. S. Brady.*

Bairdia simplex, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 51, pl. vii. figs. 1 a-d.

This was lately recorded by Dr. Brady from Taviani, Fiji, between tide-marks. It occurs in one sample only at Funafuti, in the first boring in the Atoll, near the surface (Sollas coll.).

BAIRDIA HIRSUTA, *G. S. Brady.*

Bairdia hirsuta, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 50, pl. viii. figs. 3 a-d.

Typical examples of this form were found in the lagoon dredgings at Funafuti (David coll.), as follows:—

Sample no. 10, 5 miles from the Mission Church, 20 fathoms; sample no. 14, 7 miles from the Mission Ch., 26 fathoms.

BAIRDIA MILNE-EDWARDSII, *G. S. Brady.*

Bairdia Milne-Edwardsii, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 56, pl. x. figs. 4 a-g; id. 1890, Trans. Roy. Soc. Edinb. vol. xxxv. p. 494.

This form is rather difficult to separate from *B. foveolata*, and appears to bear out Dr. Brady's conclusion that they may be merely varieties of the same species. The dorsal area is generally more tumid in this form. It has been recorded, among other localities, from Nouméa, New Caledonia, from Fiji and Samoa.

At Funafuti it is a frequent and well-distributed form; occurring in the sand of the first boring near the surface; the beach-sand, Avalau Islet; the lagoon beach at Funafala; and the lagoon dredgings, Rocky Islet (Sollas coll.). Also from the dredgings across the lagoon, sample no. 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms; sample no. 17, $8\frac{1}{2}$ miles from the Mission Ch., 12 fathoms; sample no. 18, 9 miles from the Mission Ch., $7\frac{1}{2}$ fathoms; from Funamanu, 150 fathoms;

off Tutanga at 35, 50-60, and 200 fathoms; and S. of Fuafatu, 60 fathoms (David, Halligan and Finckh coll.).

BAIRDIA FOVEOLATA, G. S. Brady.

Bairdia foveolata, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 55, pl. viii. figs. 1 *a-f*, figs. 2 *a-f*; id. 1890, Trans. R. Soc. Edinb. vol. xxxv. p. 493.

This widely distributed form, which has also been noted from New Caledonia, Fiji, and Samoa, was found in the following samples from Funafuti:—In the beach-sands at Fualopa Islet and Avalau Islet; from the lagoon beach at Fufala; and in dredgings from the lagoon, Rocky Islet (Sollas coll.). In the samples from the dredgings across the lagoon, no. 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms; no. 2, 1 mile from Mission Ch., $15\frac{1}{2}$ fathoms; no. 4, 2 miles from Mission Ch., 23 fathoms; no. 17, $8\frac{1}{2}$ miles from Mission Ch., 12 fathoms; no. 18, 9 miles from Mission Ch., $7\frac{1}{2}$ fathoms: in dredgings off Funamanu, 50 and 150 fathoms; off Tutanga, 35, 50-50, and 200 fathoms (David, Halligan and Finckh coll.).

BAIRDIA ATTENUATA, G. S. Brady.

Bairdia attenuata, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 59, pl. xi. figs. 3 *a-e*.

The previously known localities for this species are Torres Straits at 155 fathoms, and off the reefs at Honolulu, 40 fathoms. At Funafuti it was found in the lagoon dredgings, Rocky Islet (Sollas coll.); and in the systematic dredgings across the lagoon, sample 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms; sample 18, 9 miles from Mission Ch., $7\frac{1}{2}$ fathoms; also off Tutanga, 200 fathoms (David, Halligan, and Finckh coll.).

BAIRDIA VENTRICOSA, G. S. Brady.

Bairdia ventricosa, G. S. Brady, 1890, Trans. R. Soc. Edinb. vol. xxxv. p. 494, pl. iv. figs. 17, 18.

This species was originally described from Nouméa, New Caledonia. Typical examples were found by the author in the beach-sand of Avalau Islet, Funafuti (Sollas coll.).

Family CYTHERIDÆ.

CYTHERE, *Müller*.CYTHERE ACUPUNCTATA, *G. S. Brady*.

Cythere acupunctata, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 68, pl. xiv. figs. 1 *a-h*.

It is interesting to record this species from Funafuti, especially since it is so rare elsewhere, having been found previously at one locality only, in the Inland Sea, Japan, at 15 fathoms.

At Funafuti *C. acupunctata* occurs in the beach-sand, Fualopa; and in the lagoon dredgings, Rocky Islet, in some abundance (Sollas coll.). Also in dredgings N. of Pava Islet, 36 fathoms, and off Tutanga, 50-60 fathoms (David coll.).

CYTHERE OBTUSALATA, *G. S. Brady*.

Cythere obtusalata, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 91, pl. xii. figs. 1 *a-c*.

Two characteristic valves of this rare species were found at Funafuti. It has been previously recorded from Bass Straits and off the Admiralty Islands in shallow water. At Funafuti it was found in the beach-sand of Avalau Islet (Sollas coll.), and off Tutanga, at 200 fathoms (Halligan and Finckh coll.).

CYTHERE PHYLLOIDES, sp. nov. (Pl. 37. figs. 3 *a-c*.)

Shell compressed, elongate; side view oblong, broader at the anterior end, narrowing somewhat to the posterior extremity; height a little more than one-half the length; anterior extremity well-rounded, posterior rounded and obliquely curved on the postero-dorsal margin; the postero-ventral margin with a few sharp denticulations; both the ventral and dorsal margins nearly straight; anterior margin with a broad flange; posterior margin steep and flanged. Seen from above, the carapace is subovate, and incurved in the middle, broad at the posterior extremity and slightly narrowing to the anterior. End view subcircular, broad at the ventral, compressed at the dorsal, margin. Surface of valves ornamented with two thin flexuous ribs which run nearly their length, and some disconnected oblique and transverse riblets; the intercostal area filled with fine reticulations. Length .9 mm.

This form seems to be related to *C. stolonifera*, G. S. Brady *, but differs in the shape of the valve, which in the latter is oblong, with a much-produced infero-posteal extremity. The ornamentation is on the same general plan, but in *C. phylloides* it is much more delicate. The carapace of *C. phylloides* is much more tumid and rounded in section than that of *C. stolonifera*.

C. phylloides was found in Sample no. 3 of the 'Penguin' soundings round Funafuti—lat. 10° 12' 53" S.; long. 178° 52' E.; *Globigerina*-ooze, 2715 fathoms.

CYTHERE FORTIFICATA, G. S. Brady.

Cythere fortificata, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 75, pl. xxi. figs. 1 a-d.

This species was originally recorded from the mid-Pacific at 420 fathoms. It occurred at Funafuti, off Tutanga, at 200 fathoms (Halligan and Finckh coll.).

CYTHERE PECTUNCULATA, sp. nov. (Pl. 37. figs. 2 a, b.)

Carapace subquadrate and elongate in side view, broad at the anterior and narrower at the posterior extremity; dorsal margin sinuous, ventral straight; anterior margin well-rounded and having a flanged border, the superior edge of which is excavated or toothed; posterior extremity produced below. Surface of valve ornamented with fine pittings arranged in radiating lines, and with a central tubercle and two others situated posteriorly, one near the ventral margin behind the middle third, the other near the dorsal margin close to the upper posterior angle. Height equal to more than half the length. Edge view subovate, with the tubercles very prominent. End view subtriangular. Length .5 mm.

In some respects this form resembles *C. lactea*, G. S. Brady †, but it is much neater, narrower at the posterior extremity, and the tubercles and pittings are more distinctly developed.

C. pectunculata was found in the beach-sand of Avalau Islet, Funafuti, frequent (Sollas coll.).

CYTHERE WYVILLE-THOMSONI, G. S. Brady.

Cythere Wyville-Thomsoni, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 82, pl. xx. figs. 4 a-f.

This species is not unfrequent at Funafuti. It was found in

* Rep. Chall. Exped., Zool. pt. iii. p. 89, pl. xxi. figs. 3 a-d.

† Ibid. p. 91, pl. xxii. figs. 1 a-d.

the beach-sands at Fualopa Islet, at Avalau Islet, and in the lagoon dredgings from Rocky Islet (Sollas coll.); also in the lagoon dredgings sample 18, 9 miles from the Mission Church, at $7\frac{1}{2}$ fathoms (David coll.); and in dredgings off Tutanga at 290 fathoms (Halligan and Finckh coll.).

CY THERE PRAVA, *Baird*, sp.

Cythereis prava, Baird, 1850, Proc. Zool. Soc. pt. xviii. p. 254, pl. 18. figs. 13-15.

Cythere prava (Baird), G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 92, pl. xxii. figs. 4 a-f.

The specimens from Funafuti are not very typical, but are apparently immature. In some points they resemble *Cythere pectunculata*, sp. nov., especially in the strong tubercles seen on the surface of the valves. Dr. Brady reports it as common among the South Sea Islands.

C. prava was found at Funafuti in the samples of sand from the 1st boring in the Atoll, near the surface; and in the beach-sands of Fualopa and Avalau Islets (Sollas coll.).

CY THERE DELTOIDES, *G. S. Brady*.

Cythere deltoides, G. S. Brady, 1890, Trans. R. Soc. Edin. vol. xxxv. p. 501, pl. ii. figs. 17, 18.

This species, which was originally described from specimens obtained by Dr. Brady from New Caledonia and Samoa, was found at one locality only at Funafuti, off Funamanu, 50 fathoms. The Funafuti specimen is typical but small, and is probably a young example.

CY THERE CAUDATA, *G. S. Brady*.

Cythere caudata, G. S. Brady, 1890, Trans. R. Soc. Edinb. vol. xxxv. p. 499, pl. ii. figs. 10, 11.

Previously recorded from Fiji. It is fairly common in the lagoon dredgings, Rocky Islet, Funafuti (Sollas coll.).

CY THERE LACTEA, *G. S. Brady*.

Cythere lactea, G. S. Brady, 1865, Trans. Zool. Soc. vol. v. p. 377, pl. lx. figs. 3 a-c.

This species was found at one locality only at Funafuti, in the lagoon dredgings from Rocky Islet.

LIMNICY THERE, *G. S. Brady.*LIMNICY THERE FIJIENSIS, *G. S. Brady.*

Limnicythere fijiensis, G. S. Brady, 1890, Trans. R. Soc. Edinb. vol. xxxv. p. 505, pl. ii. figs. 33, 34.

This form, which was first described from Fiji, was regarded by Dr. Brady as probably having been washed down into the tidal pools from fresh water. It is fairly common in the beach-sand of Avalau Islet, Funafuti (Sollas coll.).

KRITHE, *Brady, Crosskey, & Robertson.*KRITHE TUMIDA, *G. S. Brady.*

Krithe tumida, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 115, pl. xxvii. figs. 4 a-d.

A single valve of this deep-water form was found in sample 2 of the 'Penguin' Soundings, 1489 fathoms.

KRITHE PRODUCTA, *G. S. Brady.*

Krithe producta, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 114, pl. xxvii. figs. 1 a-j.

Typical specimens of this form were found in the 'Penguin' Soundings—Sample 2, 1489 fathoms; Sample 3, 2715 fathoms; and Sample 19, 1995 fathoms.

LOXOCOONCHA, *G. O. Sars.*LOXOCOONCHA ALATA, *G. S. Brady.*

Loxocooncha alata, G. S. Brady, 1868, Ann. Mag. Nat. Hist. ser. 4, vol. ii. p. 223, pl. xiv. figs. 8-13.

Previously recorded localities for this species are Honolulu, Mauritius, New Caledonia, and Fiji. It is usually an abundant form where found, and this is especially the case at Funafuti. It was found in the beach-sands of Fualopa and Avalau, and in the lagoon dredgings at Rocky Islet (Sollas coll.). From the soundings across the lagoon, sample 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms; sample 18, 9 miles, $7\frac{1}{2}$ fathoms; also from dredgings N. of Pava, 32 fathoms; W. of Tutanga, 35 and 50-60 fathoms (David coll.).

LOXOCOONCHA AUSTRALIS, *G. S. Brady.*

Loxocooncha australis, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 119, pl. xxviii. figs. 5 a-f, and pl. xxix. figs. 3 a-d.

Previously known localities for this species are Port Jackson, Australia, Booby Island, and New Caledonia. Typical valves were found at Funafuti in the lagoon dredgings off Rocky Islet (Sollas coll.); and in the samples from the lagoon, No. 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms (David coll.).

LOXOCOCONCHA TUMIDA, sp. nov. (Pl. 37. figs. 5 a-c.)

Carapace seen from the side subovate, rounded, highest behind the middle; height equal to two-thirds the length; anterior extremity broad and well rounded; posterior end obliquely rounded on the dorsal angle and produced into a beak-like process; dorsal margin boldly arched, ventral slightly sinuous. Edge view subrectangular, sloping steeply towards the anterior margin, but somewhat square posteriorly. End view almost circular. Shell-surface smooth. Length .5 mm.

In some respects this form resembles *L. honoluluensis**, but is more tumid, and the surface is not relieved by pittings.

From the beach-sand, Avalau Islet, Funafuti (Sollas coll.).

XESTOLEBERIS, *G. O. Sars.*

XESTOLEBERIS GRANULOSA, *G. S. Brady.*

Xestoleberis granulosa, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 125, pl. xxx. figs. 5 a-d.

This species, which is also known from New Caledonia among other localities, occurs with some frequency at Funafuti. It is essentially a shallow-water form, and was found in the beach-sand of Fualopa Islet and the lagoon dredgings, Rocky Islet (Sollas coll.). Also from the soundings across the lagoon, sample 17, $8\frac{1}{2}$ miles from the Mission Church, 12 fathoms, and sample 18, 9 miles from the Mission Church, $7\frac{1}{2}$ fathoms (David coll.).

XESTOLEBERIS SETIGERA, *G. S. Brady.*

Xestoleberis setigera, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 125, pl. xxxi. figs. 2 a-d and figs. 3 a-c.

This form, which closely resembles *X. depressa*, G. O. Sars, is not common at Funafuti, although well distributed. It occurs in the beach-sand of Avalau, the sand from the lagoon beach at

* G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 117, pl. xxviii. figs. 6 a-f.

Funafala, and the lagoon dredgings, Rocky Islet (Sollas coll.). Also obtained from the lagoon dredgings, sample 17, $8\frac{1}{2}$ miles from the Mission Church, 12 fathoms; and from dredgings off Tutanga, 50–60 fathoms (David coll.).

XESTOLEBERIS GRACILIS, *G. S. Brady*.

Xestoleberis gracilis, G. S. Brady, 1890, Trans. R. Soc. Edinb. vol. xxxv. p. 508, pl. iii. figs. 9, 10.

Brady's figured specimens came from Samoa. At Funafuti this species occurred in the lagoon dredgings, sample 18, 9 miles from the Mission Church, $7\frac{1}{2}$ fathoms, and from dredgings off Tutanga, at 200 fathoms (David, Halligan and Finckh coll.).

XESTOLEBERIS ACUMINALIS, sp. nov. (Plate 37. figs. 4 a-c.)

Carapace compressed; in side view narrow and oblong, sides nearly straight; anteriorly produced into a pointed beak-like process; posterior extremity well-rounded; seen from below subquadrate, with sides compressed, especially in the middle; end view compressed ovate, with the ventral margin nearly flat, the dorsal arched. Length .26 mm.

From the lagoon dredgings, sample 17, $8\frac{1}{2}$ miles from the Mission Church, 12 fathoms (David coll.).

XESTOLEBERIS MARGARITEA, *G. S. Brady*.

? *Cytheridea margaritea*, G. S. Brady, 1866, Trans. Zool. Soc. Lond. vol. v. p. 359.

Xestoleberis margaritea, G. W. Müller, 1894, Fauna und Flora des Golfes von Neapel, Mon. xxi. (Ostracoden), p. 336, pl. 25. figs. 43, 44; pl. 26. figs. 2, 7.

This species appears to be new to this area, and it is well distributed. It occurred in the beach-sand at Avalau Islet, and in the lagoon dredgings of Rocky Islet (Sollas coll.). Also in the soundings across the lagoon, sample 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms; sample 17, $8\frac{1}{2}$ miles from the Mission Ch., 12 fathoms; sample 18, 9 miles from the Mission Ch., $7\frac{1}{2}$ fathoms; and from dredgings north of Pava, 36 fathoms (David coll.).

XESTOLEBERIS VARIEGATA, *G. S. Brady*.

Xestoleberis variegata, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 129, pl. xxxi. figs. 8 a-g.

The previously known localities in the Pacific for this species

are the Fiji and Samoa Islands. It is frequent at Funafuti. Found in the lagoon dredgings, sample 1, $\frac{1}{2}$ mile from the Mission Church, 10 fathoms; sample 18, 9 miles from Mission Ch., $7\frac{1}{2}$ fathoms; also in dredgings off Funamanu, 50 fathoms (David coll.).

XESTOLEBERIS ? FOVEOLATA, G. S. Brady.

Xestoleberis ? foveolata, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 130, pl. xxx. figs. 1 a-g.

The above species has hitherto been known only from shallow water. The Funafuti specimen is not typical, in having a faintly pitted surface: it seems, however, to agree in outline with Brady's figured specimens. From the 'Penguin' soundings, Sample 3, 2715 fathoms.

XESTOLEBERIS TUMEFACATA, G. S. Brady.

Xestoleberis tumefacta, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 128, pl. xxxi. figs. 4 a-d.

This has been previously recorded from the Admiralty Islands and from Nouméa, New Caledonia. One sample only was found at Funafuti, namely, in lagoon dredgings no. 8, 4 miles from the Mission Church, 26 fathoms (David coll.).

XESTOLEBERIS CURTA, G. S. Brady.

Xestoleberis curta, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 126, pl. xxxi. figs. 6 a-d.

X. curta is a well-distributed form, and occurs, among other localities, at Nouméa, the Fijis, and Samoa. At Funafuti it is somewhat rare. From the lagoon dredgings, sample 14, 7 miles from the Mission Church, 26 fathoms; also in dredgings off Tutanga, at 200 fathoms (David, Halligan and Finckh coll.).

XESTOLEBERIS NANA, G. S. Brady.

Xestoleberis nana, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 127, pl. xxxi. figs. 5 a-c.

Dr. Brady's specimen was obtained from Tongatabu at 18 fathoms. A single valve was found in the Funafuti material, from Tutanga at 200 fathoms (Halligan and Finckh coll.).

CYTHERURA, G. O. Sars.

CYTHERURA MARCIDA, G. S. Brady.

Cytherura marcida, G. S. Brady, 1890, Trans. R. Soc. Edinb. vol. xxxv. p. 508, pl. iii. figs. 24, 25.

This species was originally described from the Fijis and Samoa. It is very rare at Funafuti, and was found only in the beach-sand of Avalau Islet (Sollas coll.).

CYTHEROPTERON, *G. O. Sars.*

CYTHEROPTERON SCAPHOIDES, *G. S. Brady.*

Cytheropteron scaphoides, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 136, pl. xxxiii. figs. 1 *a-d*.

A single carapace was found in the dredgings off Tutanga, 50-60 fathoms (David coll.).

CYTHEROPTERON INTERMEDIUM, *G. S. Brady.*

Cytheropteron intermedium, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 137, pl. xxxiv. figs. 1 *a-d*.

A single valve was obtained in the sand from the 2nd boring (Sollas) at 40 feet down.

CYTHEROPTERON ELATUM, *G. O. Sars.*

Cytheropteron elatum, G. O. Sars, 1865, Oversigt af Norges marine Ostracoder, p. 81; Brady & Norman, 1899, Sci. Trans. R. Dublin Soc. vol. iv. p. 214, pl. xx. figs. 8-10.

This species is not uncommon at Funafuti. It appears to have been hitherto recorded only from localities in high latitudes. The Pacific specimens differ in no essential points from the northern form, as regards the carapace.

From the sand of the 1st boring near the surface; from the lagoon dredgings, Rocky Islet (Sollas coll.). Also from dredgings off Funamanu, 50 fathoms; and off Tutanga, 200 fathoms (David coll.).

CYTHEROPTERON ASSIMILE, *G. S. Brady.*

Cytheropteron assimile, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 138, pl. xxxiv. figs. 3 *a-d*.

A characteristic valve of this species was found in the sand of the 2nd boring (Sollas) at 40 feet from the surface. It also occurred in the beach-sands at Avalau Islet (Sollas coll.).

CYTHEROPTERON LONGICAUDATUM, *G. S. Brady.*

Cytheropteron longicaudatum, G. S. Brady, 1890, Trans. R. Soc. Edinb. vol. xxxv. p. 511, pl. iii. figs. 18, 19.

The original specimens came from Fiji; our examples, single valves only, came from the beach-sand, Avalau Islet (Sollas coll.),

and Fiji. A partially dried shell, without doubt belonging to the above species, was found in the dredgings north of Pava, Funafuti, 35 fathoms (David coll.)

SECTION III. PLATYCOPA.

Family CYTHERELLIDÆ.

CYTHERELLA, *Jones*.CYTHERELLA VENUSTA, *G. S. Brady*.

Cytherella venusta, G. S. Brady, 1880, Rep. Chall. Exped., Zool. pt. iii. p. 176, pl. xliii. figs. 4 *a-d*.

This elegant little form is quite common at Avalau Islet, Funafuti; and was found also in the sand from the 1st boring, near the surface (Sollas). The specimens on which Dr. Brady's description was based came from the reefs at Honolulu.

CYTHERELLA CINGULATA, *G. S. Brady*.

Cytherella cingulata, G. S. Brady, Les Fonds de la Mer, tom. i. p. 159, pl. xvii. figs. 24, 25; id., Rep. Chall. Exped., Zool. pt. iii. p. 177, pl. xliii. figs. 1 *a-g* and figs. 2 *a-d*.

This species has been previously found in shallow water at Hong Kong, Port Jackson, and off Booby Island.

C. cingulata is very rare at Avalau Islet, Funafuti (Sollas coll.).

EXPLANATION OF PLATE 37.

- Fig. 1. *Argillacia affinis*, sp. nov.: *a*, right valve; *b*, dorsal aspect; *c*, posterior view. $\times 45$.
2. *Cythere pectunculata*, sp. nov.: *a*, left valve; *b*, ventral edge view. $\times 45$.
3. *Cythere phylloides*, sp. nov.: *a*, left valve; *b*, dorsal aspect; *c*, posterior view. $\times 45$.
4. *Xestoleberis acuminalis*, sp. nov.: *a*, right valve; *b*, ventral aspect; *c*, posterior aspect. $\times 90$.
5. *Loxococoncha tumida*, sp. nov.: *a*, right valve; *b*, ventral aspect; *c*, posterior view. $\times 45$.
6. *Bythocythere armata*, sp. nov.: *a*, left valve; *b*, dorsal aspect. $\times 45$.